

LARVAE OF NORTH AMERICAN *LEUCONYCTA* (NOCTUIDAE)

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ABSTRACT. Mature larvae of *Leuconycta diptheroides* (Guenée) and *L. lepidula* (Grote), the only known members of *Leuconycta*, are illustrated, described, and diagnosed based on eight specimens of the former reared from ova on *Solidago* sp. and two specimens of the latter reared from ova on *Taraxacum* sp. Although resembling one another in coloration and structure, larvae of the two species can be distinguished by characters in the hypopharyngeal complex.

Additional key words: Acontiinae, *Leuconycta diptheroides*, *L. lepidula*, hypopharyngeal complex.

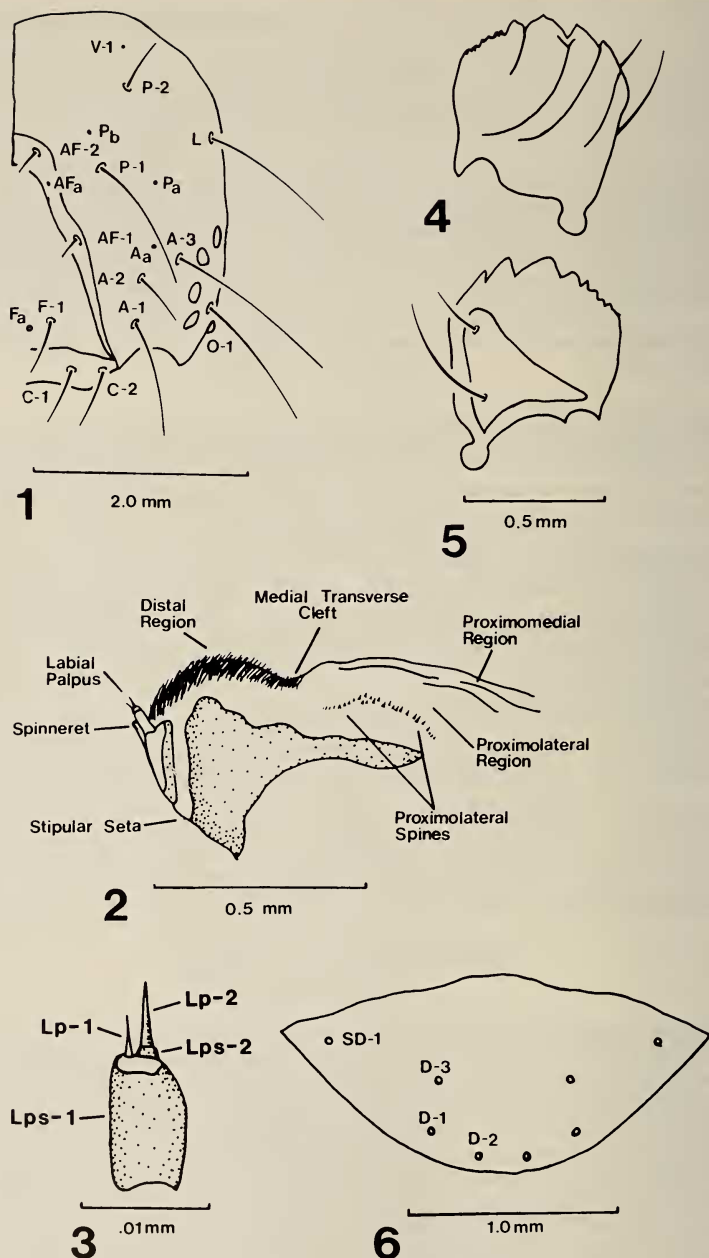
The North American noctuid genus *Leuconycta* Hampson (Acontiinae) contains two species, *L. diptheroides* (Guenée) and *L. lepidula* (Grote). Larval systematic and life history information has been presented by Dyar (1898), Forbes (1954), and Crumb (1956). Crumb was unable to find color or structural differences by which to separate larvae of the species of *Leuconycta*. The purpose of this paper is to more fully describe and diagnose mature larvae, especially with respect to mouthparts and chaetotaxy, which have been shown by Godfrey (1972) to be of taxonomic value.

Leuconycta diptheroides and *L. lepidula* are common and widely distributed in North America, both ranging from Nova Scotia S to North Carolina, and W to Manitoba, Kansas, and Colorado (Forbes 1954). Larvae of *L. diptheroides* have been recorded feeding on *Solidago* sp. (Dyar 1898), and those of *L. lepidula* on *Taraxacum* sp. (Forbes 1954).

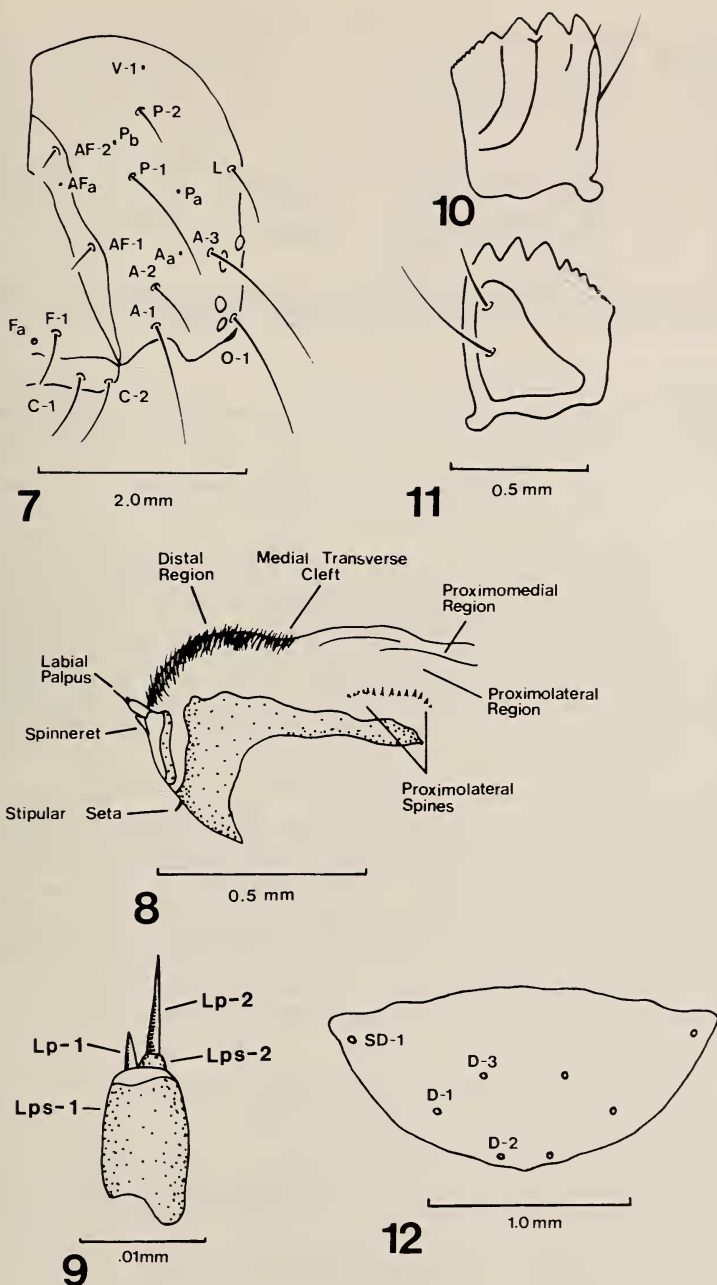
Terminology and abbreviations here follow Godfrey (1972). Specific collecting localities and dates are provided in individual descriptions.

Genus *Leuconycta* Hampson (Figs. 1-14)

Diagnostic description (diagnostic characters in italic). Head 1.6-2.5 mm wide, total body length 25.8-32.2 mm (N = 10). *Head and body smooth. Body broad at middle, tapering slightly anteriorly and posteriorly. Prolegs present on abdominal segments (Ab) 3-6, size increasing posteriorly; those of Ab6 twice size of those on Ab3. Crochets uniordinal. All setae simple. Coloration of living material.* Head green, no lines or markings present. Body green, darker at edges of mid-dorsal and subdorsal lines and ventral edge of subdorsal area; ventral area lighter green; mid-dorsal and subdorsal lines white, the latter wider and more irregular; spiracular line greenish white, more whitish on dorsal and ventral edges and bordered dorsally by a narrow red line on thoracic segments (T)1 and 2. Cervical and anal shields concolorous with trunk, the latter with a white medial and two white lateral lines. Pinacula white, the dorsal pinacula larger than lateral and ventral pinacula. Spiracles yellow with black peritremes. True legs greenish, slightly brown distally. Proleg shields concolorous with trunk. **Coloration of preserved material.** Head and body light cream color. Lines and pinacula concolorous with body.



FIGS. 1-6. *Leuconycta dipteroides* larval structures. 1, Head, frontal view. 2, Hypopharyngeal complex, left lateral view. 3, Labial palpus, lateral view. 4, Left mandible, oral surface. 5, Left mandible, outer surface. 6, Anal shield, dorsal view.



FIGS. 7-12. *Leuconycta lepidula* larval structures. 7, Head, frontal view. 8, Hypopharyngeal complex, left lateral view. 9, Labial palpus, lateral view. 10, Left mandible, anal surface. 11, Left mandible, outer surface. 12, Anal shield, dorsal view.

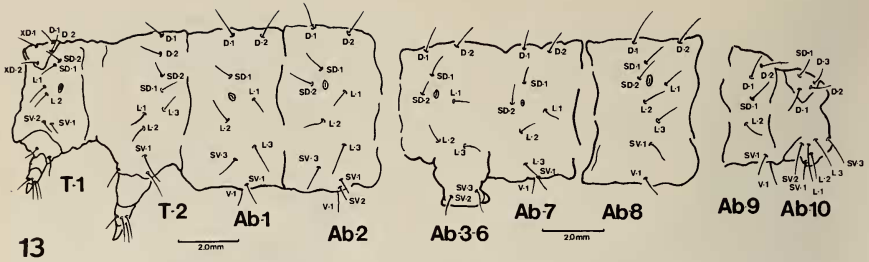


FIG. 13. *Leuconycta diptheroides*. Dorsal and lateral chaetotaxy of prothoracic (T1), mesothoracic (T2), and abdominal segments (Ab1-3, Ab6-10).

Spiracles white, peritremes dark brown. **Head** (Figs. 1, 7). Cervical indentation shallow; adfrontal sutures terminating at epicranial suture; epicranial suture longer than height of frons; frons slightly higher than its basal width. Adfrontal setae (AF)2 above, and posterior head setae (P)1 below, even with, or slightly above apex of frons; anterior head puncture (Aa) below a straight line between posterior head puncture (Pa) and anterior head setae (A)3. P2, P1, and AF1 in a straight line, Aa closer to A3 than to A2, A1-A3 forming an obtuse angle at A2; lateral head seta (L) even with or slightly below juncture of adfrontal ecdysial lines. Distance between ocelli (Oc)2-Oc3 greater than Oc1-Oc2 and Oc3-Oc4. **Mouthparts.** Hypopharyngeal complex (Figs. 2, 8): *Spinneret short and broad. Stipular setae varying from extremely short to slightly less than 1/2 length of 1st segment of labial palpus (Lps1). Labial palpi* (Figs. 3, 9) *with length of segments variable. Distal and proximal regions of hypopharyngeal complex separated by shallow medial transverse cleft; distal region of hypopharyngeal complex covered with spines which are long, slender, shorter proximally; proximolateral region with spines small, triangular, numbers variable.* **Mandible** (Figs. 4, 5, 10, 11). Two well separated outer setae present; inner surface with 3 distinct ridges, the last short; outer margin with 12 teeth, the 1st small, 2nd to 4th well developed and angular, 5th to 12th small and angular.

Thorax. Prothoracic segment (T1) (Figs. 13, 14): Shield smooth and weakly sclerotized, subdorsal body setae (SD)1 and 2 separated from prothoracic shield, setae SD1 and lateral body seta (L)2 fine, hairlike, and with a thickened sclerotized annulus at base; major axis of prothoracic shield passing behind SD1 and SD2, and between subventral body setae (SV)1 and 2; spiracle broadly elliptical, height less than twice its width. **T2-3** (Figs. 13, 14): SD1 fine, hairlike, with a thickened sclerotized annulus at base. Tarsal claws with basal angles acute. Metathoracic coxae contiguous. **Abdomen.** Dorsal and lateral chaetotaxy of Ab2-6 with 3 SV setae; SV1 and SV2 setal insertions well separated. Ab7-8 with 1 SV seta. Ab9: SD1 fine, hairlike, with a thickened annulus at base. Ab10: Anal shield as in Figs. 6 and 12. Dorsal margin convex, posterior margin entire; subanal setae widely separated.

Leuconycta diptheroides (Guenée)

(Figs. 1-6, 13)

Head 2.2-2.5 mm wide, total length 25.8-31.0 mm (N = 8). Larva as described above except: Hypopharyngeal complex (Fig. 2) with spinneret about 1/2 length of 1st segment of labial palpus (Lps). Labial palpus (Fig. 3) with Lps1 about 3 times length of seta borne by 1st segment of labial palpus (Lp), 13 times length of Lps2, 2 times length of Lp2. Lps2 less than 1/2 length of Lp1. Stipular setae very short, about 1/2 length of Lps1, less than 1/4 length of Lp1, subequal to Lps2. Proximolateral spines small, 10-14 small triangular spines.

Material examined. 8 specimens: New Minas, Kings Co., Nova Scotia, reared on *Solidago* sp. from ova obtained from a female collected 19 June 1985. Moth collected,

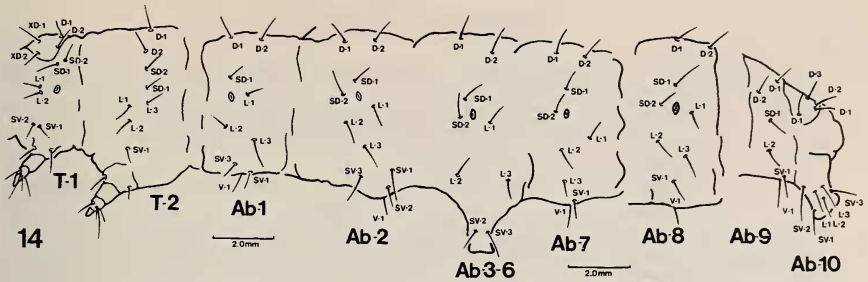


FIG. 14. *Leuconycta lepidula*. Dorsal and lateral chaetotaxy of prothoracic (T1), mesothoracic (T2), and abdominal segments (Ab1-3, Ab6-10).

determined, and larvae reared by author. All specimens in Nova Scotia Museum collection, Halifax, Nova Scotia.

Leuconycta lepidula (Grote) (Figs. 7, 12, 14)

Head 1.6-1.8 mm wide, total length 31.3-32.2 mm (N = 2). As described for genus except: Hypopharyngeal complex (Fig. 8) with spinneret slightly less than $\frac{1}{2}$ length of Lps1; labial palpus (Fig. 9) with Lps1 slightly less than 5 times length of Lp1, 12 times length of Lps2, less than 2 times length of Lp2. Lps2 about $\frac{1}{2}$ length of Lp1. Stipular seta slightly less than $\frac{1}{3}$ length of Lps1, longer than Lp1, and about twice length of Lps2; proximolateral region with 10-14 triangular spines; spines larger than in *L. diptheroides*.

Material examined. 2 specimens: Chicago, Illinois, reared on *Taraxacum* sp., 24 June 1934, A. K. Wyatt. Specimens in U.S. National Museum, Washington, D.C.

Discussion

Larvae of *L. diptheroides* and *L. lepidula* resemble one another closely, but can be separated by the following mouthpart characters: In *L. diptheroides*, the stipular seta is $\frac{1}{15}$ the length of Lps1 compared with *L. lepidula* in which this seta is slightly less than $\frac{1}{3}$ length of Lps1, and proximolateral spines are larger in *L. lepidula* than in *L. diptheroides*.

Franclemont and Todd (1983) placed *Leuconycta* in Acontiinae, whereas Forbes (1954) and Crumb (1956) placed it in Amphipyrinae. The latter two authors considered larval characters; those such as the open silk pore on the spinneret, presence of five pairs of abdominal prolegs and two SV setae on Ab1 strongly indicate Amphipyrinae, but resolution of the discrepancy should be based on a wider range of material than examined here.

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